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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,177

02/03/2006

Toshio Tada

21581-00458-US

2225

30678

7590

01/26/2010

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EXAMINER

HARM, NICKOLAS R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

01/26/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,177	Applicant(s) TADA ET AL.	
	Examiner NICKOLAS HARM	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,8,9,11-13 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,8,9,11-13 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

1. Claims 2, 4, 6, 7, 10, 14-17, 19, and 20 have been canceled.
2. Claims 1, 3, 5, 8, 9, 11-13, and 18 are present and have been fully considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 5, 8, and 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The terms "normal temperature" and "normal pressure" in claims 3, 5, 8, and 18 are relative terms which render the claims indefinite. The term "normal" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what working temperature and pressure applicant considers "normal" relative to the invention at hand.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 1791

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1, 3, 5, 8, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over EVANS et al. (US 5,501,761) in view of ONO (JP 2002-343760 A – English translation).

a. Regarding claims 1, 3, 11, and 12, EVANS teaches an adherend that is adhesion bonded to a substrate (col. 4, lines 59-65) that is removed by placing the substrate and adherend in a container that can handle a large increase in pressure, along with supercritical carbon-dioxide, increasing the pressure in the container to as much as 5000 psi (34 MPa), and finally removing the adherend and substrate from the container (col. 4, lines 33-41 and 65-67). It would have been obvious to one of ordinary skill in the art at the time of the invention that the container must have an air-tight seal in order to increase the pressure in the container without also increasing the pressure in the surrounding environment an equal amount, and that the pressure in the container must be released in order to remove the adherend and substrate from the pressurized container. ONO teaches the removal of an adherend bonded to a semiconductor wafer, glass material, or ceramic material by dissolving the adhesive between the adherend and substrate in an apparatus containing gas and water at a subcritical state, supercritical state, or any state there between (paras. 10-15). ONO explains that one of ordinary skill in the art would desire to use both supercritical gas and

Art Unit: 1791

water in order to dissolve adhesive that bonds an adherent to a substrate because the water is a good chemical solvent but can dissolve the sides of the pressure container , and that the rate of this dissolution can be reduced by filling the pressure container with a supercritical gas before adding the solvent water (paras. 52-55).

b. Regarding claims 5 and 18, EVANS discloses the claimed invention except for the step of sealing a release agent in the container. It would have been obvious to one having ordinary skill in the art at the time the invention was made to seal a release agent in the container, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ. The motivation to add a release agent is that they are readily available in the art and their characteristics are well known.

c. Regarding claim 8, EVANS teaches that carbon dioxide in the container becomes supercritical in the pressurization step (col. 4, lines 37-41).

d. Regarding claim 9, EVANS teaches that the protective adhesive coating can be a polymer (col. 1, lines 14-17) which can be a synthetic resin, or, alternatively, would render obvious the use of a resin as the adhesive to one of ordinary skill in the art at the time of the invention. EVANS teaches that the temperature in the container is adjusted (col. 4, lines 43-45), but does not explicitly teach that the temperature is greater than 20 degrees Celsius below the glass transition temperature of the adhesive resin. However, the temperature to

Art Unit: 1791

which the container is raised is a result-affected variable that depends on the adhesive resin being used. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the temperature in the container to greater than 20 degrees Celsius below the glass transition temperature of the adhesive resin, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

9. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over EVANS and ONO, as applied to claim 12 above, in further view of SHOHI et al. (US 6,383,647).

e. As to claim 13, SHOHI teaches heating laminated glass with an interlayer film at 150 degrees Celsius (col. 2, lines 4-10), which is equivalent to firing the glass and interlayer film. While SHOHI doesn't teach firing the particular laminate glass interlayer film that results from the method of claim 12, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the interlayer film of SHOHI for the interlayer film of EVANS because the two are analogous arts, the method of EVANS is not limited to one particular interlayer film, and it would have been obvious to one of ordinary skill in the art to try several different interlayer films in the method of EVANS, including the interlayer film of SHOHI.

Response to Arguments

10. Applicant's arguments filed October 23 have been fully considered but they are not persuasive.

f. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant argues that EVANS never discloses the use of water with a supercritical carbon dioxide; however, ONO does teach such use (see above).

g. Applicant also argues that ONO teaches away from using a solvent in supercritical, subcritical, or liquefied gas state to disassemble a "high molecular compound" [sic]. However, ONO not only does not teach away from such use, but explicitly teaches using water as a solvent in a subcritical through supercritical state along with supercritical gas, and explains that the motivation to do so is that the sides of the reaction chamber will be in contact with the corrosive polar solvent water for a reduced amount of time if supercritical inactive gas is also used (see above).

Conclusion

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 1791

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICKOLAS HARM whose telephone number is (571)270-7605. The examiner can normally be reached on Mon-Thurs, 7:30a-5:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on (571)272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NICKOLAS HARM/
Examiner, Art Unit 1791

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1791